STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

January 7, 2008

Amanda Jones
Morris & Ritchie Associates, Inc.
18 Boulden Circle, Ste. 36
New Castle, DE 19720

RE: PLUS review – PLUS 2007-11-06; Savannah

Dear Ms. Jones:

Thank you for meeting with State agency planners on December 5, 2007 to discuss the proposed plans for the Savannah project to be located southwest of Camden and Wyoming, north of Willow Grove Road, east of Moose Lodge Road.

According to the information received, you are seeking annexation into the Town of Camden with an R-5 zoning for a portion of the site and annexation into Wyoming with R-2 zoning on a portion of the site. If annexed and approved, it is our understanding that you will develop a mixed use site plan consisting of 1543 residential units, commercial buildings, and a school site.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. This letter will not address the proposed annexations as that is discussed through the Plan of Services process. Until the annexations are approved, Kent County is the governing authority over this land. Once it is determined which jurisdiction will govern this property, the developer will need to comply with their regulations regarding the development this parcel.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- This project is located in Investment Levels 2, 3 and 4 according to the *Strategies for State Policies and Spending.*
- The portion of the plan that is intended to be annexed by Wyoming is currently identified in a certified comprehensive plan, and as such is considered to be consistent with the *Strategies*.
- The portion of the plan that is intended to be annexed by Camden is identified in a pending comprehensive plan update, and it will considered consistent with the *Strategies* once that plan is adopted and certified.
- It is recommended that the parcels be consolidated and subdivided prior to annexation to ensure that the boundary agreed upon by all parties is properly documented and recorded.
- It is recommended that the applicant coordinate closely with the State Agencies, utility and service providers, and both towns to ensure that the project has adequate facilities and is well integrated into both communities.
- A high quality of architectural design, landscaping, and amenities is recommended to ensure that this is an attractive and successful development project.

Street Design and Transportation

- Delaware Route 10 is a major collector road and Moose Lodge Road is a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads and 30 feet from the centerline on local roads. Therefore DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.

- DelDOT will also require the developer to provide a 15-foot wide permanent easement along the frontage of both roads for a future 10-foot wide shared use path and we may require the construction of that path.

- While DelDOT will defer to the relevant service providers, they are concerned that the development may not be clearly enough divided between Camden and Wyoming for the purposes of emergency services and law enforcement.

- The presence of Norfolk Southern's Delmarva Secondary railroad line raises three issues. The first is routine safety, to prevent children and pets from wandering onto the tracks, and buffering to shield residents noise, vibration and possible hazards associated with a derailment. DelDOT trust that the Town codes are adequate in these regards but the Towns may contact the Delaware Transit Corporation for technical assistance as necessary. Mr. David Campbell, who may be reached at (302) 576-6032, can serve as an initial contact.

- The second is emergency access to the tracks. From Route 10 to Southern Boulevard (Kent Road 74) there is a distance of about one mile without a grade crossing. The subject development would abut the tracks for about half that distance. It is suggested that it would be a reasonable concession to public safety to provide an access road along the development's frontage on the railroad tracks.

- DelDOT recommends reserving sufficient land in the development to allow for future grade separation of Route 10 and the railroad tracks.

Natural and Cultural Resources

- The site contains excellent recharge areas. DNREC applauds the developer's site design, which places sports fields on the excellent recharge areas. However, it is important that these fields be designed and constructed appropriately to promote recharge. If these fields are not properly designed, the compaction resulting from construction and use could actually inhibit recharge of water into the aquifer.

- DNREC recommends moving the proposed wells to larger open space areas to allow for appropriate wellhead protection areas.

- DNREC recommends redesigning the site to minimize forest loss.

- DNREC recommends buffers of 100 feet from all wetland areas.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: David Edgell 739-3090

Savannah represents a mixed use project adjacent to both Camden and Wyoming. It is our understanding that it is the intention of the applicant to annex the northern portion of the project into Wyoming, and the southern portion of the project into Camden. Both towns and the applicant have met and come to a consensus on a boundary line in the project which will separate the two towns. In addition, there is one portion of the project which is currently within Camden's town limits.

The parcel on which this development proposal is located is designated Investment Levels 2, 3 and 4 according to the *Strategies for State Policies and Spending*. Since the *Strategies* were adopted, Wyoming has adopted and the State has certified a comprehensive plan which includes the entire northern portion of the site as an annexation area. Our office has recently reviewed a plan update from Camden (PLUS 2007-11-10) which includes the southern portion of the parcel as an annexation area. Municipal annexation areas identified in certified comprehensive plans are considered to be consistent with the *Strategies.* We consider the Wyoming portion of the project to be consistent with the *Strategies* at this time. Once Camden's plan update is adopted and certified we will consider the Camden portion consistent with the *Strategies* as well.

Our office supports the concept of mixed use projects located in or adjacent to municipalities which can provide utilities and public services to the new residents. The Savannah project contains a variety of housing types, parks and open spaces, institutional uses (a school site), and commercial services. The design incorporates many of the concepts promoted in our publication Better Models for Development in Delaware, and has potential to be a very attractive and successful development. We offer the following recommendations to the applicant and both towns for their consideration:

1. It is recommended that the parcel be subdivided/consolidated into two lots prior to annexation. This will ensure that the boundary agreed to by all parties is properly recorded and reflected in the annexation procedures.

2. It is recommended that the developer use high quality architectural designs for the structures in the development. The land plan is attractive, yet the success of the project will ultimately be determined by the quality of the architecture, landscaping, and amenities provided within the project. Better Models for Development in Delaware can be a good resource that will provide examples of successful projects.

3. It will be essential to work with the relevant utility and service providers to ensure that this development has adequate public facilities and is well integrated into both communities.

4. It is recommended that that applicant consider the recommendations in this letter, and work with the State Agencies, and the Caesar Rodney School District as the project is developed.

5. It is recommended that the developer and both towns develop a written agreement that addresses roles and responsibilities for each party both during and after construction.

Division of Historical and Cultural Affairs – Contact: Terrance Burns 739-5685

In reference to this parcel/property (project area), the State Historic Preservation Office of Division of Historical & Cultural Affair would like to mention and recommend the following:

1. There are a few known historic dwellings/houses with scattered outbuildings (K-3740, K-3760, K-3788), and a known historic Archaeological site (K-5457, 7K-C-102) very close to this parcel, or possibly on or within parcel. These historic dwellings/houses are all late 19th-century or early 20th-century, and their not National Register Property/Sites. One of the dwelling/houses are located on Road 125 east side-south of junction west/Road 52 (K-3740), another is on a dirt road off Road 125 just west of the railroad track (K-3760), and another one is on Route 10 north side-east of junction west/Road 125 (K-3788). The Archaeological site (K-5457, 7K-C-102) is approximately 1.7km southwest of Wyoming between Almshouse Branch of the railroad.

2. In addition, this parcel/property is in a vicinity where the nature and historic context of the vicinity, area, environment or land cover is primarily agriculture, a portion of forrest, a portion of wetlands/wet-woods, and there is a possibility that there could probably be potential archaeological resources on or within parcel/property, or nearby. These archaeological resources could probably be prehistoric-period or historic-period because of the combination of various soil types on the parcel/property, and the nature and historic context of vicinity, area, environment and land cover.

3. If any archaeological resources were to ever be found or located, the developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery

of unmarked human remains during construction can result in significant delays while the process is carried out. Delaware's Unmarked Human Remains Act of 1987 can be found in Title 7, Chapter 53 and Chapter 53 of the Delaware Code.

4. Finally, the State Historic Preservation Office-Division of Historic & Cultural Affairs recommends that proir to any demolition or ground-disturbing activities, or before any construction proceeds the developer may want to hire an archaeological consultant to check or examine this parcel/property for the possibility of any archaeological resources here such as a cemetery, burial ground, or unmarked human remains. If you would like to discuss this information or recommendation in further detail, contact Mr. Terence Burns at State Historic Preservation Office of Division of Historic & Cultural Affairs at (302) 736-7400 ext.25.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

The subject parcels are zoned AC in Kent County, except for the shopping center lands, which are zoned C-2 in the Town of Camden. As proposed, the residential land and the school site would be annexed into the Towns of Camden and Wyoming and zoned R-5 in Camden and R-2 in Wyoming. The table below provides details on the residential development:

Municipality	Dwelling Type	Number of Units
Wyoming	Market Rate Single-Family Detached	161
	Active Adult Single-Family Detached	354
Camden	Market Rate Single-Family Detached	303
	Market Rate Townhouses	325
	Market Rate Condominiums	300
	Apartments	100

Our comments are as follows:

1) Delaware Route 10 is a major collector road and Moose Lodge Road is a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads and 30 feet from the centerline on local roads. Therefore DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.

2) DelDOT will also require the developer to provide a 15-foot wide permanent easement along the frontage of both roads for a future 10-foot wide shared use path and we may require the construction of that path.

3) A traffic impact study has been completed for this development. The study and our review of it identified significant existing and projected congestion problems in the area. While these problems already exist, the proposed development would contribute to them. DelDOT has met with the developer about the situation and is working to identify solutions to those problems. Currently DelDOT intends to withhold comment until they can present a set of phased improvements based on a comprehensive transportation plan and suggest how the developer might participate in them. If either Camden or Wyoming requires specific comments before then, they may contact Bill Brockenbrough at (302) 760-2109.

4) While DelDOT will defer to the relevant service providers, they are concerned that the development may not be clearly enough divided between Camden and Wyoming for the purposes of emergency services and law enforcement.

5) The presence of Norfolk Southern's Delmarva Secondary railroad line raises three issues. The first is routine safety, to prevent children and pets from wandering onto the tracks, and buffering to shield residents noise, vibration and possible hazards associated with a derailment. DelDOT trust that the Town codes are adequate in these regards but the Towns may contact the Delaware Transit Corporation for technical assistance as necessary. Mr. David Campbell, who may be reached at (302) 576-6032, can serve as an initial contact.

   The second is emergency access to the tracks. From Route 10 to Southern Boulevard (Kent Road 74) there is a distance of about one mile without a grade crossing. The subject development would abut the tracks for about half that distance. It is suggested that it would be a reasonable concession to public safety to provide an access road along the development's frontage on the railroad tracks. Norfolk Southern presently maintains an unpaved single-lane road along the tracks for maintenance purposes. It may therefore be possible for the developer to partner with Norfolk Southern and use part of the railroad right-of-way to build a two-lane road there.

   Finally, there is the matter of a future grade separation on Route 10. At grade crossings of railroad lines are inherently unsafe, to such an extent that new public ones are no longer permitted. At the same time, the risk involved is proportional to the volume of traffic and the cost of eliminating them is high. For these reasons, DelDOT has no current plans to bridge Route 10 over the railroad line.

However, the volume of traffic on Route 10 will likely continue to grow over time. Therefore DelDOT recommends that the developer reserve sufficient land in the area of the railroad crossing to allow for a future bridge over the railroad line. As necessary, the developer's site engineer may contact the Project Development Section for assistance in determining the area that would need to be reserved. Mr. Michael Simmons, the Assistant Director for Project Development South can serve as an initial contact in this regard. He may be reached at (302) 760-2330.

6) If the annexations are approved, the developer's site engineer should contact our project manager for Kent County, Mr. Brad Herb, regarding specific requirements for access and off-site improvements. Mr. Herb may be reached at (302) 266-9600.

The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-9071

Soils

According to the Kent County soil survey update, Sassafras, Hambrook, Ingleside, Fallsington, Hurlock, and Longmarsh were mapped on subject parcel. Sassafras, Hambrook, and Ingleside are well-drained upland soils that, generally, have few limitations for development. Fallsington and Hurlock are poorly-drained wetland associated (hydric) soils that have severe limitations for development. Longmarsh is a very poorly-drained wetland associated (hydric) floodplain soil that has the highest severity level for development.

An estimated 30-35% of this site is mapped as poorly- and very poorly-drained (hydric) Hurlock, Fallsington and Longmarsh soils. Hydric soils typically have a seasonal high water table at or near the soil surface (within one-foot of soil surface or less). Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or "nor'easters." This is in addition to increased flooding probabilities from surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, sidewalks, and stormwater management structures). It is strongly recommended that such soils be avoided.

Wetlands

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested riparian wetlands were mapped over a significant portion of this parcel.

Impacts to Palustrine wetlands are regulated by the U.S. Army Corps of Engineers (USACE, or "the Corps") through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Corps also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Management Program (DCMP) Section. Each of these certifications represents a separate permitting process. Please be advised that nationwide permits have been suspended in Delaware and are pending further coordination with the Corps. Therefore, contrary to past practices, Coastal Zone Management approval can no longer be assumed. Individual certifications must be granted from the DCMP office for each project intending to utilize a Nationwide Permit. For more information on the Federal Consistency process, please contact the DCMP office at 302.739.9283. To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Based on a review of existing buffer research by Castelle et al. (1994), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100-foot in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies (including all ditches).

Impervious Cover

Based on a review of the PLUS application form, post-construction surface imperviousness was projected by the applicant to reach 30 percent. However, given the projected scope and density of this project, this estimate appears to significantly understate the actual amount of created surface imperviousness. When calculating surface imperviousness, it is important to consider all created forms of constructed surface imperviousness (i.e., rooftops, sidewalks, roads, and stormwater management ponds) in the calculation for surface imperviousness; otherwise, an inaccurate assessment of this project's environmental impacts will result. Surface imperviousness should be recalculated with all of the above-mentioned forms of constructed surface imperviousness included.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings – are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the St. Jones watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the St. Jones watersheds, a post-development TMDL reduction level of 40% will be required for nitrogen and phosphorus. Additionally, a TMDL reduction level of 90% will be required for bacteria.

TMDL Compliance through the Pollution Control Strategy (PCS)

As stated above Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the St. Jones watershed. The TMDL calls for a 40% reduction in nitrogen and phosphorus, while a TMDL reduction of 90% will be required for bacteria; both nutrient and bacteria reductions must be from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients and bacteria to meet the TMDL requirements. Additional nutrient reductions may be possible through the implementation of BMPs such as wider vegetated buffers along watercourses/wetlands, increasing the amount of passive, wooded open space, use of pervious paving materials to reduce surface imperviousness, and the deployment of green-technology stormwater management treatment technologies. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

The information provided indicates that the Camden-Wyoming Sewer & Water Authority will provide water to the already annexed project(s) through a central public water

system. Our files reflect that the Camden-Wyoming Sewer & Water Authority does not currently hold a Certificate of Public Convenience and Necessity (CPCN) to provide public water in this (these) areas(Parcel Identification #'s NM 93.00-02-28.00, NM 93.00-02-41.00, NM 93.00-02-43.00, NM 93.00-02-44.00, NM 93.00-02-46.00, NM 93.00-02-47.00, & NM 102.00-01-80.00, however, the other two parcels(Parcel Identification #'s NM 02-94.00-01-22.00 & NM 02-94.00-01-21.00 are located within the public water service area granted to Camden-Wyoming Sewer & Water Authority under CPCN 95-CPCN-06. According to §203C, Subchapter II, Chapter 1, Title 26, Delaware Code, the municipality is required to give notice to the Public Service Commission when the annexation is complete. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at (302)739-4247. Since on-site public wells will be needed, a minimum isolation distance of 150 feet is required between the well and any potential source of contamination, such as a septic tank and sewage disposal area. Furthermore, they must be located at least 150 feet from the outermost boundaries of the project(s). The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be located and constructed in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Water Resource Protection Areas

The Water Supply Section, Ground Water Protection Branch (GWPB) has determined that project site falls significantly within an excellent ground-water recharge area. The plan also shows three proposed well sites within the development (see following map and attached map). The wellhead protection areas for these wells are unknown.

Wellhead Protection Areas are the surface and subsurface areas adjacent to public water supply wells where contamination could, if released, travel to the well. Land use activities or impervious cover on wellhead protection areas may adversely affect the quality and quantity of drinking water in these areas.

If the wells are developed in the surficial aquifer, the wellhead protection areas may cover a large area given the proposed population. If the wells are developed in the surficial aquifer, the associated wellhead protection areas will likely exceed impervious cover thresholds recommended by DNREC. If the wells are developed in confined aquifers, there is still a potential threat to Well Location #2 because it overlaps a proposed stormwater management pond. This pond is a potential source of contamination to the well as sited.

Ground Water Protection Branch recommends:

1) Relocate wells to a larger open space

2) DNREC should have the opportunity to provide comments after the well site locations, well construction type, and proposed water demand.

3) Well # 2 must comply with the isolation distances from the stormwater management pond according to State Sediment and Stormwater Regulations.

4) Well #1 is located in a wetland and should be relocated.

Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. These materials are able to transmit water very quickly from the land surface to the water table. Excellent ground-water recharge areas are an "indicator of how fast contaminants will move and how much water may become contaminated" (Andres, 2004, pg 1). Land use activities or impervious cover on areas of excellent groundwater recharge potential may adversely affect the quality and/or quantity of ground water in these areas.

The GWPB recommends that the portion of the new development within the wellhead protection area and/or the excellent ground-water recharge area not exceed 20% impervious cover. Some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area. However, the development should not exceed 50% regardless. A water balance calculation will be necessary to determine the quantity of clean water necessary to be recharged via a recharge basin (Kauffman, 2005). The purpose of an

impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies. The proposed development would change the impervious cover from 0.1% to approximately 30%. The PLUS applicant provided these numbers on the PLUS application form.

The GWPB applauds the developer's efforts to minimize impervious cover within the excellent ground-water recharge potential area. The plan shows what appears to be soccer and baseball fields within the excellent ground-water recharge potential area. These areas would provide considerable recharge provided they are designed properly. Fields constructed and maintained for sports may inhibit infiltration and contribute to flooding if they are not designed properly. Areas of excellent recharge function best when undisturbed because changes to the structural properties may result in compaction and cause significant reduction in recharge capacity (Schueler, 2000).

The GWPB:

1) Minimize grading that would impair flow and plant species of grass that would not impede infiltration.

2) Relocate any open space areas to the part of the parcel within the wellhead protection area and the excellent ground-water recharge area. This would decrease the total impervious area in these two areas.

3) Retain the forested area on the west edge of the property within the excellent ground-water recharge area.

4) Augmenting the ground-water recharge with clean rooftop run-off systems are another alternative to reducing the total impervious cover within excellent ground-water recharge potential areas (Kauffman, 2005).

5) Perform a water balance calculation to quantify the quantity of clean water recharged via a recharge basin (Thornthwaite, 1957).

In addition, because the wellhead protection area is the source of public drinking water and the excellent ground-water recharge area so readily affects the underlying aquifer, the storage of hazardous substances or wastes should not be allowed within these areas unless specific approval is obtained from the relevant state, federal, or local program.

References

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.
http://www.udel.edu/dgs/Publications/pubform.html#nvestigations

Kauffman, G.J., Wozniak, S.L., and Vonck, K.J., 2005, Delaware Ground-Water Recharge Design Manual: Newark, DE, Water Resources Agency, University of Delaware, p. 31.

Listed as: "Supplement 1 – Groundwater Recharge Design Methodology"
http://www.wr.udel.edu/swaphome/Publications/SWPguidancemanual.html

Schueler, T. R., 2000, The Compaction of Urban Soils, *in* Schueler, T.R., and Holland, H.K., eds., The Practice of Watershed Protection: Ellicott City, MD, Center for Watershed Protection, p. 752.

Thornthwaite, C. W. and Mather, J. R., 1957, Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance: Drexel Institute of Technology, Laboratory of Climatology, Volume x, Number 3

Map of Savannah (PLUS 2007-11-06) The green area is excellent ground-water recharge potential area. The red area is the wellhead protection area for the Camden-Wyoming Moose. The site plan is overlain on the aerial image. The forested area in the western portion of the parcel is outlined in black and labeled. The proposed well sites are shown in yellow circles. The proposed pond that overlaps well #2 is outlined in blue and labeled.

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Kent Conservation District. Contact Jared Adkins, Program Manager, at (302) 741-2600, ext. 3, for details regarding submittal requirements and fees.

Because of the parcel's location in an impaired watershed and the amount of impervious surface, consider incorporating more green technology BMPs and low impact development practices to reduce stormwater flow and to meet water quality goals.

The provided plan shows a well placed in an area also designated as a stormwater management area. Section 10.2.15.6 of the State of Delaware Sediment and Stormwater Regulations requires infiltration practices designed to handle runoff from impervious parking areas shall be a minimum of 150 feet from any public or private water supply well. Please refer to the comments from the Water Supply Section as well as any requirements identified in the town's source water protection ordinances when siting the wells and stormwater management areas to avoid potential contamination of drinking water supplies.

The Sediment and Stormwater Management Program ensures sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies, including the siting of stormwater management facilities. However, we do not support placement in resource protection areas or the removal of trees for the sole purpose of placement of a stormwater management facility/practice.

Drainage

- This project is partially located within the Guytown Tax Ditch, which has existing tax ditch rights-of-way. Any modification of the tax ditch or tax ditch right-of-way will require approval of the Tax Ditch Association and a change to the tax ditch court order. Please continue to work with Bob Enright of the Drainage Program concerning tax ditch right-of-way issues.

- Existing tax ditch rights-of-way should be free from permanent obstructions, including landscape buffers, to allow for routine maintenance and periodic reconstruction. Routine maintenance primarily consists of mowing ditch bank vegetation and the removal of small blockages. Periodic tax ditch reconstruction involves the removal of sediment from the ditch bottom to reestablish the original design grade. The removed sediment, referred to as spoil, is typically disposed of by spreading within the tax ditch right-of-way.

- The Drainage Program recommends that the developer schedule a pre-application meeting with the Kent Conservation District Sediment and Stormwater Program as soon as possible and include Bob Enright of the Drainage Program.

- There are known drainage problems with Red House Branch. The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.

- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.

- The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in yards in certain cases. Therefore, catch basins placed in rear and side yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, pools, and kennels can hinder drainage patterns as well as future maintenance to the storm drain or catch basin. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.

- An increase of the side yard setback to 15 feet may be needed on all properties with a drainage easement on the side. The increase will allow room for equipment to utilize the entire easement and maneuver free of obstructions if the drainage conveyance requires periodic maintenance or future re-construction. The side yard setback would only increase on the side with the drainage easement.

- All catch basins in rear or side yards should have a 10-foot drainage easement around them on all sides. Place restrictions on fences, sheds, and other structures within the easement to prevent obstructions from being place next to the catch basin. Record the easement on the deed.

- Preserve existing riparian buffers on this site to aid in the reduction of nutrients, sediment, and other pollutants entering the watershed. Please explore methods to filter excess nutrients in stormwater runoff from this site before releasing the stormwater into the watershed.

- The Drainage Program does not support the removal of trees for the creation of stormwater management areas. However, the Drainage Program recognizes that tree removal is unavoidable in some cases. Where practical, plant native trees and shrubs to compensate for the loss of nutrient uptake and stormwater absorption the removed trees provided.

For questions or clarifications, please contact Jim Sullivan at (302) 739-9921.

Rare Species

DNREC has never surveyed this property; therefore, it is unknown if there are State-rare or federally listed plants, animals or natural communities at this project site that would be impacted by project activities.

Forest Preservation

A greater effort could have been made to reduce forest loss at this site. This project has 1543 residential units along with infrastructure and amenities on 311 acres and was designed without regard for the location of these woodlots. The woodlots are important because they provide areas for wildlife to seek cover and travel from area to area in a landscape largely cleared in the past for agriculture and development. State wetland maps also indicate a portion of these woodlots contain wetlands and the integrity of these wetlands will be compromised by the site plan design as there are inadequate upland buffers.

Cumulative forest loss throughout the State is of utmost concern to the Division of Fish and Wildlife which is responsible for conserving and managing the State's wildlife (see www.fw.delaware.gov and the Delaware Code, Title 7). Because of an overall lack of forest protection, we have to rely on applicants and/or the entity that approves the project (i.e., counties and municipalities) to consider implementing measures that will aide in forest loss reduction.

Recommendations:

1) Lots and associated infrastructure that will require fragmentation and clearing of the existing forested areas should be removed.

2) Further efforts should be made to provide at least 100ft (in width) upland buffers around wetlands. This will entail moving lots/infrastructure and/or redesigning the site plan.

Nuisance Geese

Wet ponds created for stormwater management purposes may attract resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within an adequate buffer (15-30 feet in width) around the ponds. When the view of the surrounding area from the pond is blocked, geese can't scan for predators and are less likely to reside and nest in the area of the pond.

At this time, we do not recommend using monofilament grids due to the potential for birds and other wildlife to become entangled if the grids are not properly installed and maintained. In addition, the on-going maintenance (removing entangled trash, etc.) may become a burden to the homeowners association or land manager.

The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 118.4 tons (236,834.4 pounds) per year of VOC (volatile organic compounds), 98.0 tons (196,082.8 pounds) per year of NOx (nitrogen oxides), 72.3 tons (144,673.5 pounds) per year of SO2 (sulfur dioxide), 6.4 ton (12,878.4 pounds) per year of fine particulates and 9,905.4 tons (19,810,895.7 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 47.8 tons (95,526.1 pounds) per year of VOC (volatile organic compounds), 5.3 ton (10,510.8 pounds) per year of NOx (nitrogen oxides), 4.4 ton (8,722.4 pounds) per year of SO2 (sulfur dioxide), 5.6 ton (11,255.9 pounds) per year of fine particulates and 193.6 tons (387,241.4 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 18.9 tons (37,859.7 pounds) per year of NOx (nitrogen oxides), 65.8 tons (131,685.8

pounds) per year of SO2 (sulfur dioxide) and 9,711.8 tons (19,423,654.3 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	118.4	98.0	72.3	6.4	9905.4
Residential	47.8	5.3	4.4	5.6	193.6
Electrical Power		18.9	65.8		9711.8
TOTAL	166.2	122.2	142.5	12.0	19810.8

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 18.9 tons of nitrogen oxides per year and 65.8 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, http://www.energystar.gov/:

"ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment."

The DNREC Energy Office is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

We also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction.

The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

Underground Storage Tanks

There are no LUST site(s) located near the proposed project. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

State Fire Marshal's Office – Contact: Duane Fox 739-4394

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements**:
   - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. The infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Fire Protection Features:**
   - For townhouse buildings, provide on the Site plan, a section / detail and the UL design number of the 2-hour fire rated separation wall.

c. Accessibility**:**
   - All premises, which the fire department may be called upon to protect in case of fire shall be provided with suitable gates and access roads so that all buildings on the premises are accessible to fire apparatus. This includes that the access road to the subdivision from Willow Grove Rd. and from Moose Lodge Rd (S/R 15) must be constructed so fire department apparatus may negotiate it.
   - Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.

- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. Gas **Piping and System Information:**

- Provide type of fuel proposed, and show locations of bulk containers on plan.

e. Required **Notes**:

- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Proposed Use of each individual building
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Townhouse 2-hr separation wall details shall be shown on site plans
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture recognizes that the proposed project is located in all four Investment Levels according to the *Strategies for State Policies and Spending* the *Strategies for State Policies and Spending*. In general, the Department encourages

environmentally responsible development in Investment Level 1, 2 and 3 areas, and opposes any development located in whole, or in part, in Level 4 areas.

Since this project has already been considered in both Camden and Wyoming's comprehensive plan, with the intention of annexation, the Department does not object in this case. However, the Department continues to discourage municipalities from annexing Level 4 areas for development as a matter of policy.

The project site is located within an area designated as having "excellent" ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an "excellent" rating designates an area as having important groundwater recharge qualities.

Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity.

Maintaining pervious cover in excellent and good recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware. The developer should make every effort to protect and maintain valuable ground-water recharge potential areas.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the "Right Tree for the Right Place" for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource. Please feel free to contact the Delaware Forest Serve at (302) 698-4500 for more information.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Vicki Powers 739-4263

This proposal is for rezoning of 311 acres from AC and C-2 to R-5 and R-2 for a mixed-use development consisting of 1,543 residential units and 143,000 sq. feet of commercial property located Southwest of Camden and Wyoming, north of Willow Grove Road, east of Moose Lodge Road. According to the State Strategies Map, the proposal is located in an Investment Level 1, 2, 3, and 4 area. As a general planning practice, DSHA encourages residential development in areas where residents will have proximity to services, markets, and employment opportunities such as Investment Level 1 and 2 areas outlined in the State Strategies Map. Furthermore, DSHA encourages residential development in Level 1 and 2 areas that are affordable to first time homebuyers. DSHA supports the fact that this proposal targets the full range of incomes including first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA shows the median income price in Kent County to be $196,000. However, families earning respectively 100% of Kent County's median income only qualify for mortgages of $181,441, thus creating an affordability gap of $14,559. The provision of units within reach of families earning at least 100% of Kent County's median income would help increase housing opportunities for first time homebuyers.

DSHA has developed a website, **Affordable Housing Resource Center**, to learn about resources and tools to help create housing for households earning 100% of median income or below.

The DSHA website can be found at: www.destatehousing.com "Affordable Housing Resource Center" under our new initiatives.

If you have any questions, please feel free to call Victoria Powers at (302)739-4263 ext. 219 or via e-mail at vicky@destatehousing.com. Thank you.

Department of Education – Contact: John Marinucci 735-4055

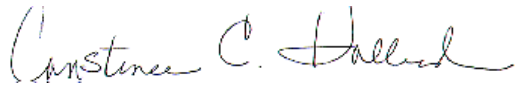
This proposed development is within the Caesar Rodney School District boundaries. DOE offers the following comments on behalf of the Caesar Rodney School District.

1. Using the DOE standard formula, this development will generate an estimated 772 students.
2. DOE records indicate that the Caesar Rodney School Districts' *elementary schools* ***are at or beyond*** *100% of current capacity* based on September 30, 2007 elementary enrollment.
3. DOE records indicate that the Caesar Rodney School Districts' *secondary schools* ***are at or beyond*** *100% of current capacity* based on September 30, 2007 secondary enrollment.
4. This development, as well as other planned and recorded residential sub divisions within district boundaries, will create additional elementary and secondary student population growth which will further compound the existing shortage of school facility space.
5. The developer is strongly encouraged to contact the Caesar Rodney School District Administration to address the issue of school over-crowding that this development will exacerbate.
6. DOE requests developer work with the Caesar Rodney School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

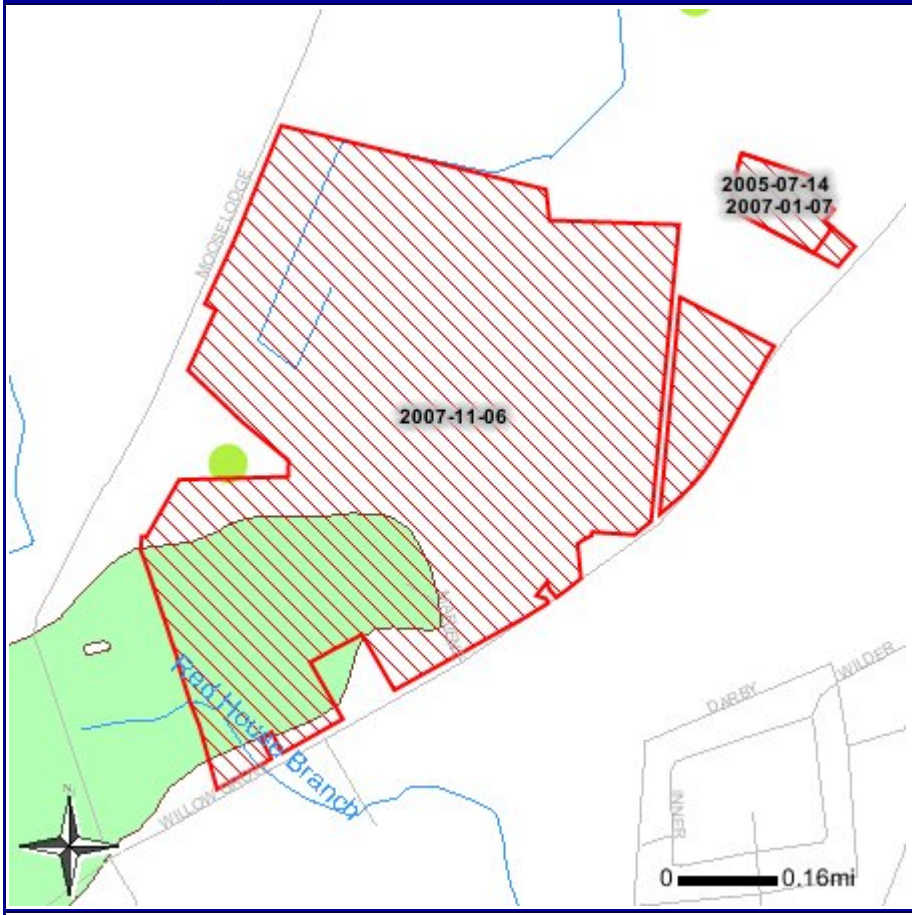


Constance C. Holland, AICP
Director

CC: Kent County
Town of Camden
Town of Wyoming

Savannah

2007-11-06



PLUS Projects

NHDFlowLine

Wellhead Protection Areas

All Roads

Excellent Recharge Areas

This map was produced by the Delaware Department of Natural Resources and Environmental Control.